ABSTRACT

SERIAL CONNECTED LOW-LOSS SYNCHRONOUSLY SWITCHABLE VOLTAGE CHOPPER

The invention relates to a buck converter comprising:

- a pair P_0 of switches SB, SH in series and connected to an input terminal B of the converter by the switch SB,
- K other additional pairs P_1, P_2,..., P_i,... P_K-1, P_K of switches in series between another input terminal A and the switch SH of the pair P_0, with i = 1, 2,...K-1, K, the two switches of the same additional pair P_i are connected in series via an energy recovery inductor Lr_i;
- K input groups, Gin_1, Gin_2,...Gin_i,... Gin_K-1, Gin_K, of Ni capacitors C each in series;
- K output groups, Gout_1, Gout_2,...Gout_i,... Gout_K-1, Gout_K, of Mi capacitors C each in series.

The switches P_0 and the K additional pairs are simultaneously controlled by first and second complementary control signals.

Applications: high-efficiency converters with low output voltages.

Figure: 2